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VOC PROGRAM TEST RESULTS
First Quarter Summary - 1988
May 17, 1988

The Safe Drinking Water Act Amendments of 1986 established a nationwide testing program for 59 volatile organic compounds (VOCs) in drinking water supplies. EPA has specified maximum contaminant levels(MCLs) for eight of these. The program follows a phased-in approach with public water suppliers serving 10,000 or more customers beginning testing in 1988. Massachusetts has proposed regulations which require surface water supplies to test for four quarters for the listed VOCs while groundwater supplies must test two quarters during this initial year of testing. The frequency of subsequent testing will be determined by DEQE based on an assessment of each source's vulnerability to VOC contamination. Summarized below are the results from the first quarter of the testing program.

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VOC TEST RESULTS

147 Public Water Supplies Serving > 10,000 persons

19 Exemptions Granted (For Systems Purchasing Tested Water)
10 Incomplete Submissions - Not Included In Analysis
33 Unaccounted For
85 Public Water Supplies Covered in This Analysis

Of the 85 PWS Analyzed

19 (22%) Public Water Supplied Detected Nothing
24 (28%) Public Water Supplies Detected Disinfection Byproducts Only
32 (38%) Public Water Supplies with Trace Amounts of the VOCs
10 (12%) Public Water Supplies with Exceedances of Existing or to be Proposed MCLS

600 Sources Tested: 154 (26%) Detected Nothing
457 (78%) Groundwater Sources: 143 Detected Nothing
133 (22%) Surface Water Sources: 11 Detected Nothing

Regulated VOCs (the 8 VOCs with MCLs)
- Detected 83 times
- Detected 55 times ≥0.5 ug/l*

* The federal regulations etablish 0.5 ug/l as the regulatory detection limit; sources must be sampled quarterly if one of these 8 VOCs is detected ≥ 0.5 ug/l.

Exceedances (ug/l)

Location	Contaminant	Level/Standard	G/S	Status
Burlington (#7)	Trichloroethylene	6.7/5.0	G	Taken off-line
Northboro (Lyman)	Trichloroethylene	5.0/5.0	G	Off-line
Holyoke (Pequot)	Trichloroethylene	9.13/5.0	G	Being disconnected
Scituate (#19)	Trichloroethylene	8.0/5.0	G	In Contamination Correction Program

DEQE was previously aware of each of these situations and is working with the communities involved.

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Results Summary by Community

Abington/Rockland	Nothing Detected
Acton	3 G ND; 2 G with Detectable Levels
Amesbury	Disinfection Byproducts Only
Andover	Disinfection Byproducts Only
Ashland	2 G with Detectable Levels
Attleboro	2 G with Detectable Levels
Barnstable	22 G with Detectable Levels
Bellingham	Nothing Detected
Beverly/Salem	Disinfection Byproducts Only
Billerica	Disinfection Byproducts Only
Bourne	5 G with Detectable Levels
Brewster	3 G with Detectable Levels
Bridgewater	1 G with Detectable Levels
Brockton	1 s with Detectable Levels
Burlington	1 G Disinfection Byproducts 2/3 G with Detectable Levels 1 G taken off-line (std. exceeded)
Cambridge	Disinfection Byproducts Only
Chatham	3 G with Detectable Levels
Chicopee	Disinfection Byproducts Only
Danvers	1 S - Disinfection Byproducts; 2 G with Detectable Levels
Dartmouth	Disinfection Byproducts Only
Duxbury	Nothing Detected
Easton	Nothing Detected
Fairhaven	Nothing Detected
Fall River	Disinfection Byproducts Only
Falmouth	2 S with Detectable Levels
Framingham	4 S with Disinfection Byproducts 1 Emerg. G with Detectable Levels 2 Emerg. G ND
Franklin	1/7G with Detectable Levels
Gloucester	Nothing Detected
Greenfield	Nothing Detected
Harwich	9 G with Detectable Levels
Haverhill	Disinfection Byproducts Only
Holden	1/5 G with Detectable Levels
Holliston	Nothing Detected
Holyoke	Disinfection Byproducts 1 Well with Contaminant > MCL going off-line
Hudson	1 S Disinfection Byproducts 2/3 G with Detectable Levels
Ipswich	Nothing Detected
Kingston	Nothing Detected
Leominster	2 S Disinfection - 1 G with Contaminants
Lynn	1 S with Contaminants
MWRA	Disinfection Only
Medfield	Nothing Detected
Methuen	Disinfection Only
Middleboro	Nothing Detected
Milford	Disinfection Only
Natick	4/10 G with Detectable Levels

Needham	Nothing Detected
New Bedford	1 S with Detectable Levels
Newburyport	Nothing Detected
North Andover	Disinfection Only
North Reading	1/4 G with Detectable Levels
Northboro	1/2 G with Detectable Levels
Norton	1/4 G with Detectable Levels
Oak Blulffs	Disinfection Only
Orleans	5 G with Chloroform
Pembroke	Nothing Detected
Pittsfield	1 S with Detectable Levels
Plymouth	8 G with Detectable Levels
Randolph/Holbrook	Disinfection Only
Reading	1/5 G with Detectable Levels
Sandwich	4/5 G with Detectable Levels
Scituate	1 S Disinfection Byproducts, 2/5 G with Contaminants
Seekonk	Nothing Detected
Sharon	Nothing Detected
Somerset	Disinfection Only
Springfield	Disinfection Only
Stoughton	5/6 G with Detectable Levels
Swansea	Disinfection Only
Taunton	Disinfection Only
Tewksbury	5/9 G with Detectable Levels
Wakefield	Disinfection Only
Walpole	5 G with Detectable Levels
Wareham	1/2 G with Detectable Levels
Wayland	Nothing Detected
Webster	Nothing Detected
Welleslely	Disinfection Only
West Springfield	Disinfection Only
Westboro	Disinfection Only
Westfield	1 S ND: 1/3 G with Detectable Levels
Weymouth	1 S Disinfection; 3/4 G with Detectable Levels
Wilmington	2/4 G with Detectable Levels
Winchester	Disinfection Only
Woburn	1/6 with Detectable Levels
Worcester	2 S with Disinfection; 1 S with Detectable Levels
Yarmouth	23 G with Detectable Levels

NOTE: G = Sample from one or more groundwater sources
S = Sample from one or more surface water sources

ND = Nothing Detected
1/3 G with Detectable Levels means one of three groundwater sources contained detectable levels.

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VOC PROGRAM TEST RESULTS
First Quarter Summary - 1988
July 26, 1988

The Safe Drinking Water Act Amendments of 1986 established a nationwide testing program for 59 volatile organic compounds (VOCs) in drinking water supplies. EPA has specified maximum contaminant levels for eight of these. The program follows a phased-in approach by system size. Public water suppliers serving 10,000 or more customers began testing in January, 1988. The first quarter results summarized below provide the first data that will permit a prediction of the impact of the VOC rule on Massachusetts when smaller and medium-sized systems begin testing.

VOC TEST RESULTS

Status of Submitted Information

114 PWS > 10,000 Submitted Test Results
- 12 Western Region
- 19 Central
- 42 Northeast
- 40 Southeast

25 PWS received exemptions (for those purchasing water)
3 PWS will receive NONs
142 PWS > 10,000

7 PWS of the 114 submitted data from as far back as 12/86 (use of old data was permitted for first quarter only).

10 Confirmation samples were analyzed by LES.

Results by System

20 (18%) Public Water Supplies detected nothing
35 (31%) Public Water Supplies detected disinfection byproducts only
53 (46%) Public Water Supplies detected VOCs in trace amounts
6 (05%) Public Water Supplies with levels above 5μg/l trichloroethylene (MCL to be in effect in Jan. 1989)

System Results by Region

Western: 8 (79%) PWS detecting nothing or disinfection byproducts only
Central: 9 (47%) PWS detecting nothing or disinfection byproducts only
Northeast: 21 (50%) PWS detecting nothing or disinfection byproducts only
Southeast: 17 (43%) PWS detecting nothing or disinfection byproducts only

Results by Source

459[1] Sources Tested: 283 (62%) detected nothing or disinfection byproducts

382 (83%) groundwater sources: 214 (56%) detected nothing or disinfection byproducts

77 (17%) surface water sources: 69 (90%) detected nothing or disinfection byproducts

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[1] 11 Distribution System Samples were also submitted.

Results for the 8 Regulated VOCs

85 sources (83 groundwater) detected 1 or more of the 8 VOCs.
67 of these detected 1 of the 8 > 0.5µg/l, the regulatory detection limit triggering quarterly testing.

	# Sources Detecting ≥ .5		# Detecting < .5		
Contaminant	Ground	Surface	Ground	Surface	Total
1,1,1 Trichloroethane	35	2	8	1	46
Trichloroethylene	28	0	7	0	35
1,1 Dichloroethylene	2	1	3	0	6
Benzene	1	1	1	1	4
Carbon Tetrachloride	1	1	1	1	4
Vinyl Chloride	1	0	1	0	2
1,2 Dichloroethane	1	0	0	0	1
para-Dichlorobenzene	0	0	0	0	0

Results for the Unregulated Contaminants

Contaminant	Ground	Surface	Total
Tetrachlorethylene	40	2	42
Toluene	5	3	8
1,1 Dichloroethane	13	0	13
Ethylbenzene	6	0	6
trans 1,2 Dichloroethylene	9	0	9
cis 1,2 Dichloroethylene	4	1	5
Xylene	2	0	2
Fluorotrichloromethane	1	0	1
Dichlorodifluoromethane	9	0	9
1,3,5 Trimethylbenzene	3	0	3
P-isopropyltoluene	1	0	1
1,2,4 Trimethylbenzene	3	0	3
sec Butylbenzene	1	0	1
EDB	4	0	4
DBCP	0	2	2

Chloroform was detected 225 times; at least 82 of these were as a disinfection byproduct.